

Claims 43 and 45-52 have been amended to be in method format and, accordingly, the rejection to claims 43, 44 (now cancelled), 49 and 51 under 35 U.S.C. § 102(b) no longer applies. Further considering the Examiner's comments in paragraph 8 of the Office Action, there is nothing in the prior art to suggest the method now claimed. Accordingly, claims 43 and 45-52 are clearly and patentably distinct from the cited prior art.

The remaining independent claims at issue are claims 1, 6, 7, 33 and 36. All of the other non-allowed claims are claims dependent from these claims. With respect to these claims, the Examiner has rejected them under 35 U.S.C. § 103 as being unpatentable over the prior art discussed on pages 2 – 4 of the instant specification and Borsboom ('891) in view of Howarth ('602) and Hirao et al ('695). With respect to the Examiner's statement referring to the specification that the prior art interactance measurements are made using a "central aperture surrounded a small distance away by a ring aperture", this statement appears correct. It is against this background that applicant's invention was made. The application of the remaining references in the combination indicated, Borsboom, Howarth and Hirao et al, appear to be only applied by reconstructive hindsight. As is well known, such hindsight is impermissible in any consideration of obviousness. Accordingly, reconsideration and withdrawal of this rejection is respectfully requested.

In further detail, the Examiner has attempted to reconstruct applicant's invention by utilizing the teachings of Borsboom, which are clearly inconsistent with the instant invention and which could not be combined with the teachings of the remaining references by one of ordinary skill in the art. The Examiner states that Borsboom teaches a second path through the object (scattered directly back). In Borsboom's Fig. 1, however, it is clear that illumination passes into the material through a surface defined by the end aperture (diameter D) of the central fiber and is collected from the material through the identical surface area into the same end aperture (diameter D) of the central fiber. Thus, in the case of the path defined by this central fiber, the corresponding illumination and detection surface areas on the material are not separated as is required by claims 1 and 7 of applicant's invention. Borsboom also teaches (in column 2, lines 37-40) that the light collected by the illuminating fiber will have covered a short path in the material being investigated, and be hardly, if at all, absorbed. Applicant's claims 1 and 7 clearly define method and apparatus for "interactance measurements" which involve absorption within an interior portion of the material and exclusion of any energy caused by backscatter or reflection. This is directly in contrast to Borsboom's teaching. Thus, any attempt to combine Borsboom with applicant's own prior art as the primary reference here would be to no avail since Borsboom's teachings are directly antithetical to the intent and purpose of applicant's invention.

The addition of Howarth and Hirao et al adds nothing of substance to the combination for the following reasons. In claims 6, 33 and 36, these claims recite that each of the paths is defined by corresponding and separate surfaces on the material, “at least one of said surfaces of each of said paths being extended in length at substantially constant spacing from the other surface area of said each of said paths, the total length of said extended surface area of said each of said paths being substantially greater than the mean distance separating said corresponding and separated surface areas defining said each of said paths”. Equivalent language is found in claims 1 and 7 as well.

The total length being substantially greater than the mean distance separating the surface areas is supported in applicant’s disclosure. There is no teaching or suggestion in Howarth that any surface area be extended in length at constant spacing from the other surface area defining a given measurement path. Claims 33 and 36 also indicate that the extended surface area of one path “being substantially surrounded by the extended surface of said another of said paths” further distinguishes applicant’s invention over the disclosure of Howarth. Howarth teaches nothing concerning the shape of windows 61 and 62. A significant extension of the windows of Howarth’s invention is not obvious because Howarth’s structure uses a single source window and multiple windows 61 and 62 mounted in the side of a pipe. As explained in the last Amendment submitted in the parent application

beginning on page 19, lines 23-26 and page 20, lines 1-15 (which remarks are incorporated herein by reference), everything in Howarth teaches away from such extension. Thus, it would be contrary to the teachings of Howarth to increase the size of the gauge in the direction of the pipe's diameter to accommodate a lengthened window.

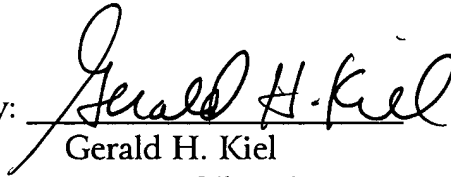
Additional reasons for fairly viewing Howarth's teachings and not extending those teachings so as to render applicant's invention obvious thereover or in combination with the other references is set forth on page 20 of the previous Amendment, last four lines through the end of page 21 of that Amendment.

Applicant submits that a fair reading and understanding of the significant prior art references, Borsboom and Howarth, makes make clear that one of ordinary skill in the art would have no understanding or suggestion to find applicant's invention as set forth in claims 1, 6, 7, 33 and 36 as being obvious. Accordingly, those claims should be allowed. The remaining claims which are dependent upon these independent claims should consequently be held allowable as well.

Based on the above, it is submitted that all of the issues in this case have been resolved and that the application should promptly pass to issue

Respectfully submitted,

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